

Abstract of disclosure

The battery with miniaturised SOFC fuel cells includes the following components: a stack (20) made up of the fuel cells (2), the volume of which is less than 10^{-3}m^3 , preferably less than 10^{-4}m^3 , a channel system (24, 25, 26) in the channels of which on the one hand reactants, namely gaseous fuel (50) and also air (40) can be fed to the cells (2) and one the other hand the fuel which is partially depleted in the cells can be subjected to after-burning; a casing (10, 11), which is at least partially made as heat insulating; a heat exchanger (6), which is part of the channel system and in which the air supplied can be heated up with the exhaust gas (60) from the afterburning; an apparatus (4) for feeding the air, an exchangeable or refillable reservoir (5) for the fuel, which is stored in this at a pressure which is greater than the environmental pressure and in which the fuel is preferably liquid; controlled valves (51) in connection lines for the reactants; furthermore a control. The fuel cells respectively contain a disc-shaped solid electrolyte (30) which in addition to ion conducting components also includes electron conducting components which cause an ohmic loss. In this way the quantity ratio of these components is so designed that in an idling operation of the battery a heat flow from the cells to the environment can be compensated by the ohmic loss.